TCS-1061

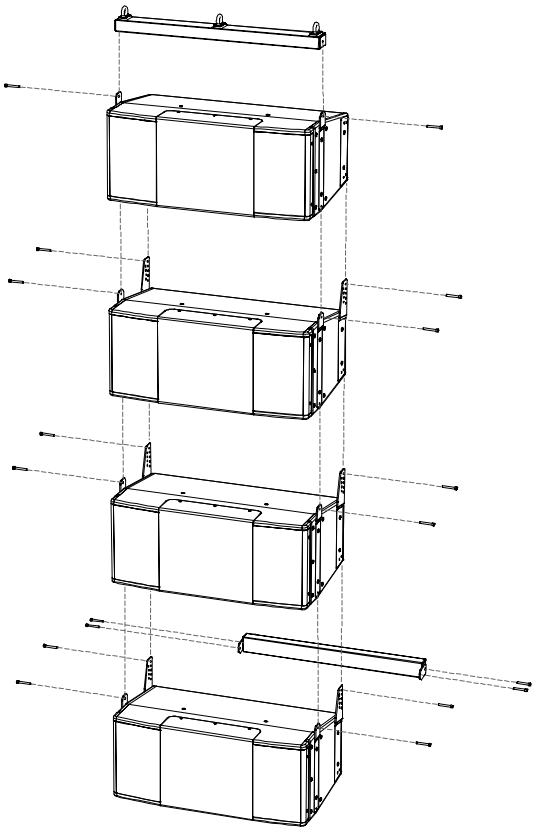
Quickstart and Rigging User Guide

(Please refer to www.turbosound.com for the latest updates)

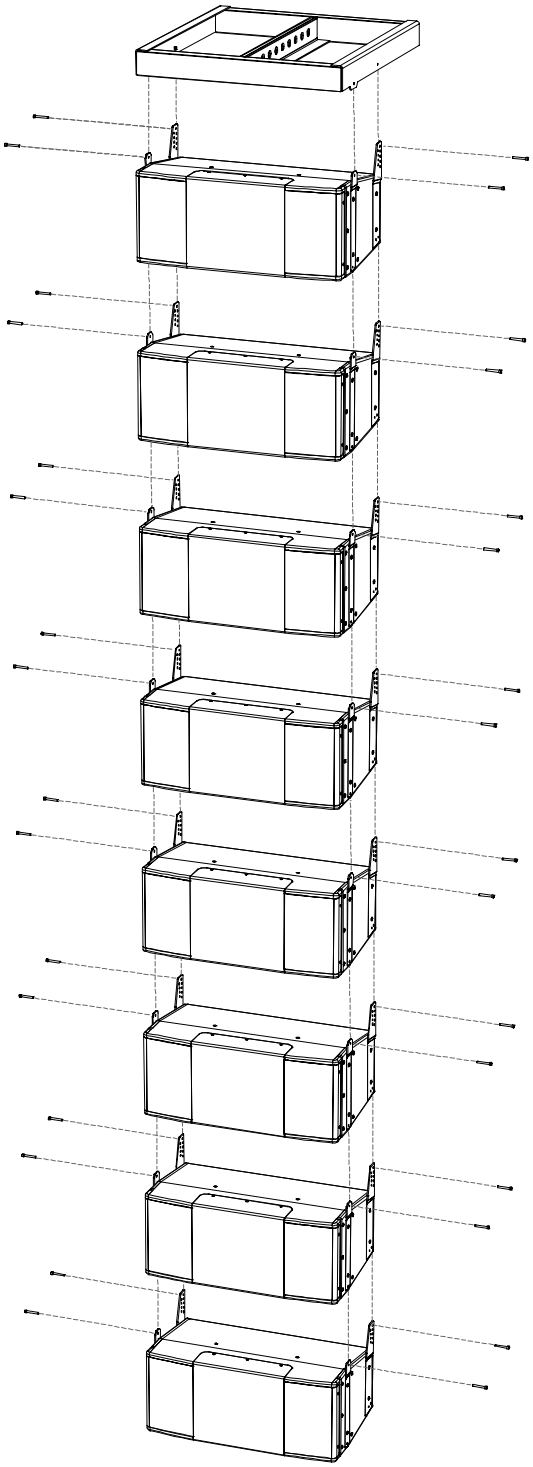
Version 1.0

The Flying Systems

FK-1061 Flying kit
(up to 5 cabinets deep)



FB-1061 Flying grid
(up to 16 cabinets deep)



Safety Information

Safety Notes on Rigging

The Turbosound rigging system has been designed and constructed to a high standard of safety, and tested to the most demanding of specifications. In order to ensure the highest safety standards, this information on the assembly and safe use of rigging accessories must be understood and followed.

Only use Turbosound recommended rigging accessories, which are specifically designed for their intended purpose. Do not use Turbosound rigging with other types or brands of loudspeakers. This practice may compromise safety standards and Turbosound will not be responsible for damage or injury so caused. Do not modify the rigging accessories, or use them in a way other than that described in this user manual. Rigging components supplied as part of a complete assembly are non-interchangeable and must not be exchanged with the component parts of any other assembly. The component parts of a Turbosound rigging accessory must only be assembled using the fasteners and methods of assembly recommended in this guide. The use of fasteners and methods of assembly not specified or approved by Turbosound may result in an unsafe rigging assembly. Welding, or any other means of permanently fixing rigging components to each other or to cabinet fixing points is not allowed. Rigging assemblies must only be assembled using the appropriate parts and fixings as specified in this manual using the specific mounting instructions. Rigging components or assemblies must only be fixed to Turbosound loudspeaker cabinets using the cabinet fixing points, assembly methods and fasteners specified in this guide and the specific mounting instructions. When assembling the loudspeaker array ensure that all fixings are securely tightened before lifting the array.

Secondary Safeties

All TCS-1061 loudspeaker clusters flown in theatres, studios or other places of work and entertainment must, in addition to the principle load bearing means of suspension, be provided with an independent, and properly rated and securely attached secondary safety. Only steel wire ropes or steel chains of an approved construction and load rating may be used as secondary safeties.

Safety Inspections

Carefully inspect rigging systems components and cabinets for defects or signs of damage before proceeding to assemble a flown array. If any parts are damaged or suspect, **DO NOT USE THEM**.

Regular, more rigorous test and inspection of rigging components must also be carried out. Safety legislation and test and inspection requirements will vary from country to country. In most cases, annual independent test and inspection by a suitably approved and qualified inspector will be required. Users must ensure compliance with all applicable safety requirements. Turbosound recommends regular safety inspections and further recommends that a logbook be kept detailing the test and inspection history of each Turbosound rigging accessory. Always wear protective headwear, footwear and eye protection in accordance with local regulations. Anyone involved in flying ANY sound system should take note of the following advice:

The rigging of a flown sound system may be dangerous unless undertaken by qualified personnel with the required experience and certification to perform the necessary tasks. Fixing of hanging points in a roof should always be carried out by a professional rigger and in accordance with the local rules of the venue. The house rigger and/or building manager must always be consulted.

Flying system components have been individually tested in accordance with the following regulations:

- The Health and Safety at Work Act 1974
- The Supply of Machinery (Safety) Regulations 1992
- The Lifting Operations and Lifting Equipment Regulations 1998

General Description

To take full advantage of the extremely flexible properties of the TCS series loudspeaker, the rigging system is designed to be intuitive, inherently safe, flexible, and simple to use. The load is taken entirely through the steel flygear and not through the cabinet's woodwork.

Rigging Parts

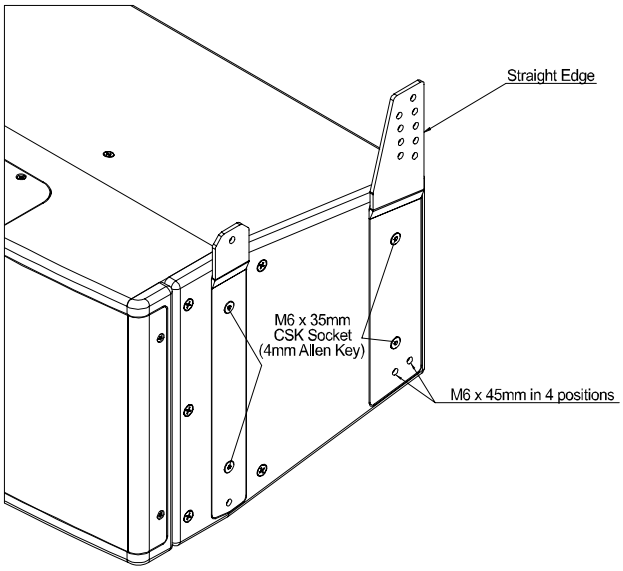
The rigging system consists of external steel flyplates fitted into rebates on the short sides of the loudspeaker enclosure forming the pivot point about which cabinets can be angled, working together with flyplates fitted towards the rear of the cabinet which mate with the flyplates of the cabinet above, providing a range of inter-cabinet angles.

A kit of parts is supplied with each TCS-1061 loudspeaker cabinet, consisting of:

8 x M6 x 35mm csk hex head screws
2 x front flyplate (not handed)
2 x rear flyplate (handed left and right)
4 x M6 x 45mm high tensile socket head screws
4 x M6 split washers
1 x 4mm Allen key
1 x 5mm Allen key

The rigging system includes all the necessary hardware to support a column of up to 5 cabinets (using the FK-1061 flying kit), or up to 16 cabinets (using the FB-1061 flying grid).

The rigging design allows the creation of arrays that can be assembled quickly and with full control of the vertical angles between enclosures and the array's vertical inclination. A range of inter-cabinet angle adjustment is provided in 2° increments from 0° to 16°.



FK-1061 FLYING SYSTEM WILL SUPPORT A COLUMN OF UP TO 5 CABINETS DEEP

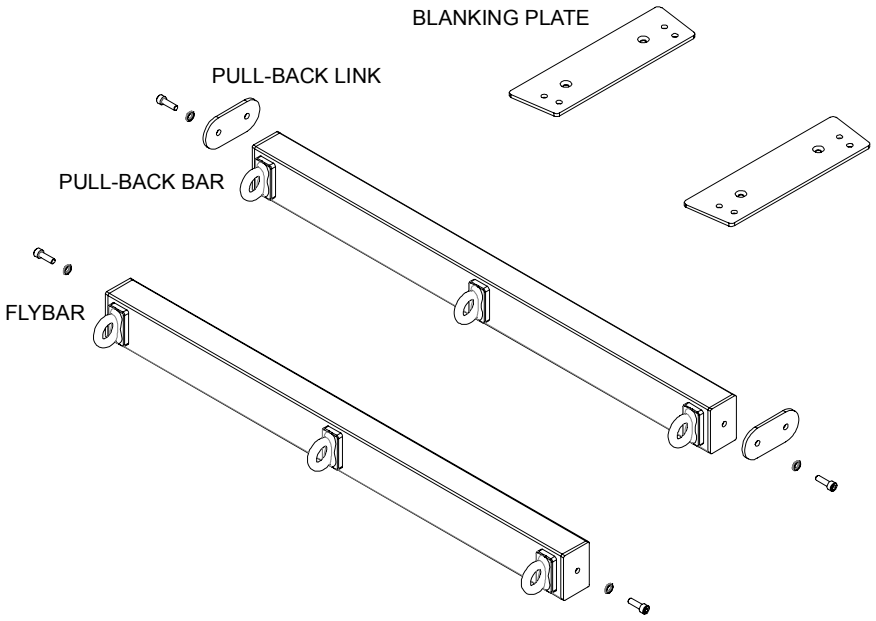
FK-1061 Flying Kit

Enables suspension of one column of TCS-1061 cabinets up to 5 deep from a single flybar, and utilising an identical flybar fitted with pull-back links to provide a pull-back for the whole cluster. One kit is required per loudspeaker array (two kits are required to hang left and right arrays). Blanking plates are provided to fit in place of the rear flying strips on the top cabinet.

The kit consists of:

2 x flybars
2 x pull-back links
2 x blanking plates
4 x M6 x 20mm socket head screws
4 x M6 split washer

The single flybar provides three pick up points to allow for either a single lift point or double lift points, or to provide a single pull-back point or two pull-back points.

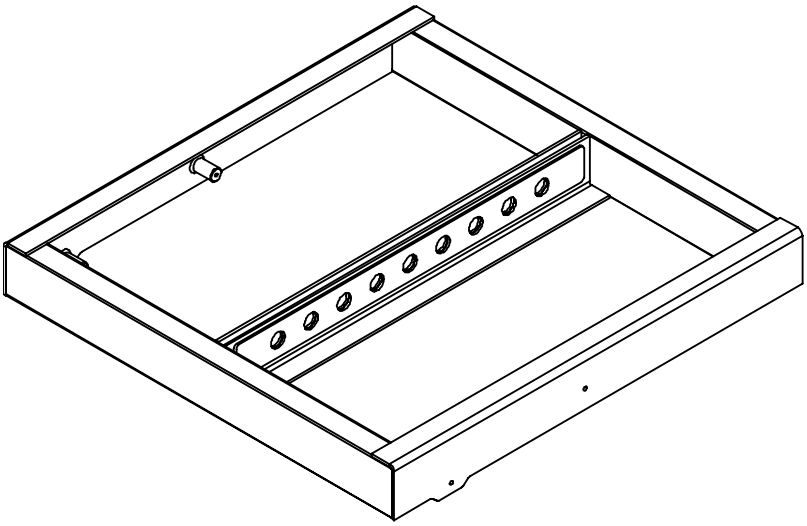


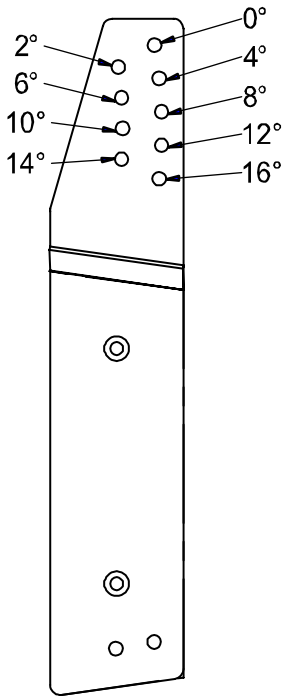
Rigging an Array of up to 5 cabinets with the FK-1061 flying kit

1. Attach a flybar to the front flying strips of the first cabinet using the M6 x 20mm socket head bolts and split washers provided. This flybar will become the lifting bar and is used to hang the array. Attach this bar to the external rigging or motor.
2. Remove both of the rear flyplates from the first cabinet and replace them with the two blanking plates supplied with the flying kit.
3. Lift the flybar array together with the first cabinet, and connect the second and additional cabinets underneath the first cabinet using the four M6 x 45 high tensile screws and M6 split washers provided, and set the inter-cabinet angles as desired. Tighten all fixings and raise the array into position.
4. Fit a blanking plate to each end of the remaining flybar using the M6 x 20mm socket head screws and split washers provided.
5. When attaching to static rigging positions the suggested method is to pre-build the entire array including the lifting bar and pull-back bar, and then lift the array into position using appropriate lifting equipment.

FB-1061 FLYING SYSTEM WILL SUPPORT A COLUMN OF UP TO 16 CABINETS DEEP

FB-1061 Flybar





The FB-1061 is a fabricated steel frame consisting of welded box sections with front and rear cabinet attachment points and a central spine offering a total of nine pick up points to allow a range of cluster angles.

The FB-1061 flybar enables the creation of an array of up to cabinets up to 16 deep.

Setting the angle between cabinets

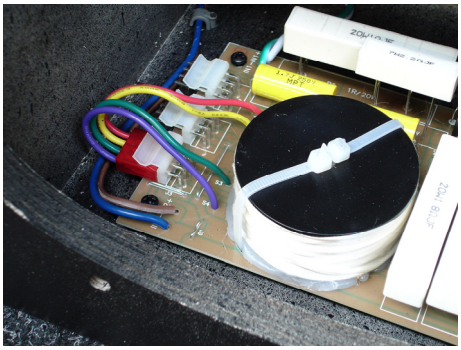
Precise adjustment of inter-cabinet angle is achieved by selecting one of nine possible engagement positions of the rear flyplates, giving a range of angles between 0° and 16° in 2° increments.

Rigging an Array of up to 16 cabinets with the FB-1061 flybar

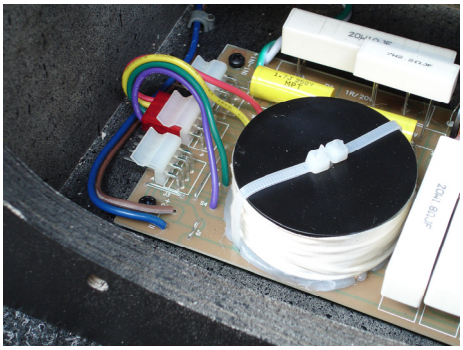
1. Select a suitable pick up point on the flying grid, and choose the inter-cabinet angles to achieve the desired array angle.
2. Attach the external rigging or motor to the chosen pick up point on the central spine of the flying grid, using a shackle rated at one tonne or greater. The shackle eyes must be at least 26mm apart to fit correctly onto the spine.
3. It is suggested to pre-assemble the cabinets in modules of two or three units, setting the pre-determined inter-cabinet angle as you go. Then attach the first module to the flying grid, and raise the array to allow a second module to be attached underneath. Repeat for the remaining modules, and raise the array into position using appropriate lifting equipment.
4. When attaching to static array positions the suggested method is to pre-assemble the entire array including the flying grid, and lift it into position using appropriate lifting equipment.

Tri-amp to bi-amp conversion

The conversion is achieved by changing the position of a jumper on the crossover board located inside the left side driver access door (when viewed from the front). The default jumper position as shipped from the factory is **TRI-AMP** as shown here.



For TCS-1061/100 wide dispersion products relocate the jumper from the **TRI-AMP** PCB header to the centre position (**BI-AMP 'HW' HORN**) as shown below.



For TCS-1061/75 narrow dispersion products relocate the jumper to the left end of the PCB, furthest away from the access door (**BI-AMP 'H' HORN**) as shown below.

Turbosound Ltd, Star Road, Partridge Green, West Sussex RH13 8RY
t: +44 (0)1403 711447 f: +44 (0)1403 710155 w: www.turbosound.com